

**UPPER MISSISSIPPI RIVER RESTORATION  
FEASIBILITY REPORT  
WITH INTEGRATED ENVIRONMENTAL ASSESSMENT**

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**KEITHSBURG DIVISION  
HABITAT REHABILITATION AND ENHANCEMENT PROJECT**

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**POOL 18, UPPER MISSISSIPPI RIVER MILES 428.0-431.0  
MERCER COUNTY, ILLINOIS**

**APPENDIX E**

**HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE  
DOCUMENTATION REPORT**

**FINAL**

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Kara Mitvalsky, P.E.**

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**HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE  
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**I. GENERAL**

**A. Authority.** The Keithsburg Division Habitat Restoration and Enhancement (HREP) Project is an ecosystem restoration project developed through the Upper Mississippi River Restoration (UMRR). The UMRR, authorized by the Water Resources Development Act (WRDA) of 1986 under Section 1103 and extended indefinitely by the WRDA of 1999, is a Federal-State partnership program for planning, construction and evaluation of fish and wildlife habitat rehabilitation projects and for monitoring the natural resources of the river system. It is a regional program that includes the U. S. Army Corps of Engineers' (Corps) St. Paul, Rock Island and St. Louis Districts. The purpose of the rehabilitation projects portion of the UMRR program is to preserve and restore habitat on the Mississippi and Illinois floodplain river system.

**B. Guidance and Policy.** The Engineering Regulation (ER) 1105-2-100, *Planning Guidance Notebook*, provides guidance for the conduct of Civil Works Planning. The policies and authorities outlined in ER 1165-2-132, *Hazardous, Toxic, and Radioactive Waste Guidance for Civil Works Projects*, and ER 405-1-12, *Real Estate Handbook*, were developed to facilitate the early identification and appropriate consideration of Hazardous, Toxic, and Radioactive Waste (HTRW) issues in all of the various phases of a water resources study or project. ER 1165-2-132 provides guidance for HTRW assessment for Civil Works projects. American Society for Testing and Materials (ASTM) Standards E1527-05 and E1528-06 provide a comprehensive guide for conducting Phase I Environmental Site Assessments (ESA). ASTM Standard E1903-97(2002) provides guidance for Phase II ESAs. These references provide information on what considerations are to be factored into project planning and implementation. The Corps' policy is to avoid construction of Civil Works projects when HTRW is located within project boundaries or may affect or be affected by such projects.

**II. INTRODUCTION**

**A. Purpose and Scope.** The specific purpose of an HTRW Documentation Report is to adequately document an appropriate inquiry into HTRW activities on potential project lands. The scope of this report documents the HTRW investigation for the Keithsburg Division HREP feasibility study.

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This HTRW inquiry is required in order to minimize and prevent Federal liability under the Comprehensive Environmental Response, Compensation and Liability Act and to reduce any threats to project workers and avoid costly delays associated with environmental abatement activities.

A Phase I ESA for the Project area was conducted by personnel from the Rock Island District Environmental Engineering Section (CEMVR-EC-DN). Copies of the Phase I ESA are available from CEMVR-EC-DN.

**B. Limiting Conditions and Methodologies Used.** The techniques used to assess HTRW contamination within and adjacent to the Keithsburg Division HREP location consisted of review of historical documents, aerial photographs, topographic maps, conducting interviews and site visits. Also, a search of federal and state environmental databases was conducted. The scope of inquiry was limited to investigating onsite HTRW potential within the Project boundaries as well as offsite HTRW potential within a reasonable distance (according to ASTM standards).

### **III. STUDY AREA**

**A. Description.** The Project area is located within portions of Sections 4, 5, 9, 10, 15, 16 and 22 in Township 73 North, Range 1 West, in Mercer County, Illinois. The Project area is the Keithsburg Division of the Port Louisa National Wildlife Refuge (NWR) and is comprised of a 1,400 acre backwater complex located on the left descending bank of the Mississippi River Pool 18 between river miles 428.0 and 431.0. In addition to the work area, there are four areas of potential flowage easements (total 23.7 acres) that are immediately adjacent to the NWR property boundaries. A 4.6 acre boat ramp site at the southern end of the Project area is owned in fee title by the USFWS; the remaining acreage is General Plan lands owned by the U.S. Government. The Village of Keithsburg, Illinois is located immediately south of the southern portion of the Project area. Maps outlining the Project area are included in Appendix E-A.

The Project area averages 0.75 miles wide and is bordered by the Edwards River to the north, Pope Creek to the south, and the Mississippi River to the west. It is separated from the Mississippi River by a three mile long berm which ties into two short sections of berm at the north and south ends. A water control structure with two 36-inch screw gates is located at the south end of the main berm. The screw gates permit water levels to be lowered by gravity during the summer and to be raised in the fall when Mississippi River flows are high enough. Keithsburg Division is a mosaic of both wetlands and bottomland forest. A mature hard mast component still survives at the north end. The flowage easement properties are the beds of two unnamed streams adjacent to row crop agriculture or conservation easement lands, the ditch and wooded floodplain adjacent to the northeast border of the NWR, and a triangle shaped wooded floodplain parcel located on the eastern border of the NWR.

**B. Physical Setting.** Surface elevations for the Project area range from approximately 530 to 540 feet above mean sea level (NGVD 1929). The Project area is part of the historical Mississippi River floodplain and topographic maps indicate it is comprised of open water, sloughs and forested islands. The west side has a berm along the Mississippi River. Boat ramps are located at the southern and northern ends. An access road leads to the northern boat ramp, while the southern boat ramp is located just off 75<sup>th</sup> Avenue. A cross dike runs roughly east-west in the northern portion with an access road

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for USFWS maintenance purposes. A gas pipeline runs east-west in the northern portion of the Project area. Along the eastern edge are the bluffs of the adjacent uplands that rise approximately 40 feet to an elevation of 570 feet. The uplands are relatively flat and remain near elevation 570.

The bluffs and uplands are comprised of Pleistocene and Holocene Epoch age sands and silts. The bluffs are wooded, with the south section of bluffs populated by cabins and rural housing. The uplands are dominated by agricultural row crop production, with interspersed areas of woodlands. Due to the sandy nature of the upland substrate, irrigation wells are present throughout the region. The Project area itself is comprised of alluvial materials consistent with sloughs and wetlands, including silts, sands and clays with high levels of organic matter. The northeastern boundary has a lowland area from which three small unnamed streams empty into the Project area. This lowland area is comprised of a combination of Conservation Reserve Program (CRP) land and row crop production.

#### **IV. ENVIRONMENTAL SITE ASSESSMENT**

A Phase I ESA was conducted for the Project area and adjacent area. The Phase I ESA documented the Project area history and issues with nutrient loading, reviewed state and federal environmental databases, and identified potential Recognized Environmental Conditions (RECs).

**A. Historical Use Information.** Prior to the 20<sup>th</sup> century, the Project area was a floodplain forest and Mississippi River backwater. The Village of Keithsburg was established in 1827 to the south of the Project area. In 1906, the Keithsburg Drainage District was established, and a levee system was built along the western edge of the Project area that is bounded by the Mississippi River. Following this the Project area was drained and utilized for row crop farming and grazing. In 1941 the Corps acquired the Project area lands and in 1945 transferred management to the U.S. Fish and Wildlife Service (USFWS). The NWR was established in 1958, with the purpose of protecting and preserving migratory birds, threatened and endangered species and wetlands. Farming and grazing stopped for the most part in 1941, but continued on a limited basis until 1984. Since the mid-20<sup>th</sup> century, the Project area has reverted back to a bottomland forest interspersed with sloughs and open water. Since the 1800's, the uplands have been dominated by row crop agricultural production. In the later 1990s, large sections of the uplands have had irrigation pivots and the associated irrigation water wells installed. Appendix E-B documents historical aerial photographs.

**B. USFWS/USACE Nutrient Investigations.** Beginning in the early 1990s the USFWS started investigating organic and inorganic contaminants within the Project area. Parameters tested over the years include nitrate/nitrite, phosphorus, heavy metals, pesticides, herbicides, ammonia, dissolved oxygen and suspended solids. In 2015, the Rock Island District joined the USFWS in determining potential sources of excess nutrients.

Based on the sampling efforts, low levels of heavy metals, herbicides and pesticides have historically been observed in sediment and water samples. The concentrations of these parameters have not exceeded any target levels applicable to protection of human health. Nutrient concentrations vary over the course of a particular year, but are being introduced by upland activities, and surface water and groundwater inputs. The nutrient concentrations do not exceed target levels applicable to the protection of human health.

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**C. Site Reconnaissance.** Site visits were conducted by Kara Mitvalsky (EC-DN) on April 22, 2015, by Steve Gustafson (EC-DN) on August 26, 2015, and Jason Appel (RE) on 4/28/2017. Interim site visits were also performed in the summer of 2015 and spring 2017. A reconnaissance was performed with visual inspection of surrounding properties. The following observations were made:

- No indications of spills or staining were observed on the gravel surfaces, spillway, or water control structures.
- No indications of hazardous materials storage areas.
- No indications of refuse or illegal dumping, however, a small depository of mussel shells which had been used to create buttons in the early 20<sup>th</sup> century was noted upstream of the interior boat ramp in August 2015.
- The railroad berm along the southern portion of the Study Area was constructed out of various materials. A power line runs across the top of the berm leading to the abandoned railroad bridge.
- An abandoned pump was located near the lower outlet structure. This had previously been served with electrical power, but the lines had been removed from the study area at the time of the site visit.
- Discharge pipes were located near the cabins, indicative of septic system outfalls (Figures E-1 and E-2, Table E-1). These are 4 to 6 inch diameter plastic pipes that exit the side of the bluff that is located along the southeastern property boundary.
- Signage and mapping (Figures E-3 and E-4) identified a high pressure gas line in the northern section of the Project area.
- Scattered debris associated with river flooding (e.g. dead trees, barrels, plastic cups, bags) was observed in various site visits.

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**Table E-1:** Cabin Outlets/Keithsburg Inlets  
(Surveyed in August 2015)

No.	Northing	Easting	NAVD 88 Invert	Code/Description
14	1619670.56	2082650.77	535.41	1601-Plastic 4-in Pipe
15	1619582.76	2082637.68	540.27	1606-Corrugated Plastic 6-in
16	1619585.13	2082643.54	544.44	1606-Clay Tile 8-in
17	1619643.40	2082645.38	537.2	1606-Corr. Plastic Tile 6-in
19	1620622.79	2082668.88	533.76	1606-Corrugated Plastic 4-in
20	1620603.04	2082657.54	531.28	1606-Corrugated Plastic 4-in
21	1620657.08	2082664.60	535.14	1606-Corrugated Plastic 4-in
22	1620841.31	2082636.08	531.55	1606-Corrugated Plastic 4-in
23	1620852.09	2082632.07	530.88	1606-Corrugated Plastic 4-in



**Figure E-1:** Typical Cabin and Plastic Pipe Discharge

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Figure E-2: Cabin Outlet Locations



Figure E-3: Pipeline Crossing

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**Figure E-4:** Approximate Location of Pipeline Crossing

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- Several inlets (Figure E-5) and culverts into the northern and northeastern portion of the site were identified.
- A transformer (Figure E-6) was located on a power pole on top of the abandoned railroad grade near the abandoned railroad bridge. No leaking or discoloration was observed.
- The remnants of buildings located prior to government acquisition were noted in some areas. An example of this was Building number 18.166 (Figures E-7 and E-8). Most of the buildings were residences or farm buildings/barns in the 1930s.
- The old pumping plant located at the Southwest corner of the Project site in 1939 had been completely removed with no building remnants observed.



**Figure E-5.** Typical Corrugated Metal Inlet

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**Figure E-6:** Transformer



**Figure E-7:** Building No 18.166 Foundations April 2015

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**Figure E-8:** Building No 18.166 April 1939

**D. Findings.** The Phase I ESA identified potential RECs in or near the Project area. Potential RECs included:

- The septic system outfalls for the cabins and rural housing located along the southeastern property boundary.
- High pressure natural gas line running east-west in the northern section of the Project area.
- American Shell Company, Great River Road, Keithsburg, IL, LUST Incident Number 913092. Unresolved status.
- Eight unmappable sites listed in Environmental Data Resources report.
- ANR Keithsburg Meter, 437 45<sup>th</sup> Ave, Keithsburg, IL. Site Remediation Program Illinois EPA. Unresolved status.
- Transformer on pole on railroad berm.
- Foundations of historic buildings at various locations.
- Inlets from upland streams and drainage ditches entering the northeastern section of the Project area.
- The assessment also identified one Historical Recognized Environmental Condition (HREC) near the Study Area:
  - Larry Robbins, 2<sup>nd</sup> and Washington Streets, Keithsburg, IL. LUST Incident Number 931793. No Further Remediation classification 8/18/1994.

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## **V. CONCLUSIONS**

The high pressure natural gas line was identified as a potential REC. However, considering the lack of reported incidents or releases associated with the gas line, there does not appear to be a reason to consider its presence as an REC.

The American Shell Company LUST site, the ANR Keithsburg Meter Site Remediation Program site, and the eight unmappable sites identified in the Environmental Data Resources Report are all located a significant distance from the Project area. Given the distance, and the age of the incidents/ concerns associated with these sites and the lack of correlating concerns, these sites do not appear to warrant any further concern.

The Larry Robbins LUST is considered an HREC. Considering the distance of this site from the Project area and the fact that the Illinois EPA granted No Further Remediation classification over 20 years ago, this LUST site does not appear to warrant any further concern.

A transformer on a power pole is present on a railroad berm south of the Project area. Visual inspection of the transformer and immediate area did not indicate any leakage or contamination. Given the lack of obvious contamination and reported incidents, the transformer does not warrant consideration as an REC.

Foundations from buildings that existed prior to acquisition by the U.S. Government are present. These are residential agricultural in nature (farm house, barns, sheds), and given the age, usage and limited extent, do not appear to warrant further consideration as RECs.

Stream and drainage ditch inlets are located along the eastern edge of the Project area, and discharge water from the adjacent land into the Refuge. While this discharge water appears to have significant nutrient loads at times, nutrients are not considered hazardous substances and do not warrant consideration as an REC.

The septic system outfalls are considered an REC. These do not appear to be in compliance with state and federal regulations. Further investigation would be required to determine if the septic systems the outfalls are associated with are performing according to regulations, and the discharge is within allowable standards to a Federal Refuge. Risks associated with possible sewage entering the Project area include pathogens, creation of toxic algal blooms and introduction of pharmaceuticals and other household chemicals.

## **VI. RECOMMENDATIONS**

**A. Additional Investigation.** Based on the Phase 1 ESA, the Rock Island District recommends further investigation regarding the septic system outfalls. While not considered HTRW, the possible introduction of human-based refuse into the Project area is a concern for construction activities and associated staff. The investigation should determine the legality of septic system discharge into the Project area, the functionality of the systems, and if the systems are in compliance with applicable regulations. The systems are not located on U.S. Government property, but discharge onto U.S.

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Government Property. If the systems are not compliant but still remain in place precautions will need to be added to the plans and specifications to ensure safety of contractor and Corps staff.

**B. Project Considerations.** If conditions remain unchanged regarding the aforementioned septic systems, potential for the discharge of untreated sewage into the Project area exists. Design of any ecosystem restoration systems, structures or practices will need to take that potential into consideration with regard to personnel, water quality and wildlife.

During any future design phase, consideration should be taken to the type and location of historic foundations, and the impact their presence may have on water control structures, berms, and other structures associated with water control and ecosystem restoration.

Separate Phase I ESAs should be conducted on the proposed flowage easement properties prior to purchase, due to the extent of time that will likely occur before real estate actions are conducted and the writing of this report.

## **VII. LIMITATIONS**

No ESA can wholly eliminate uncertainty regarding the existence for recognized environmental conditions concerning a property. This assessment is intended to reduce, but not eliminate, uncertainty regarding the existence of recognized environmental conditions in connection with a property with reasonable limits of time and cost. If any previously unaddressed recognized environmental condition should arise, this HTRW Documentation Report will be revisited. Title searches and research into environmental liens were not conducted for this report, but will be required prior to construction phase of the preferred alternative.

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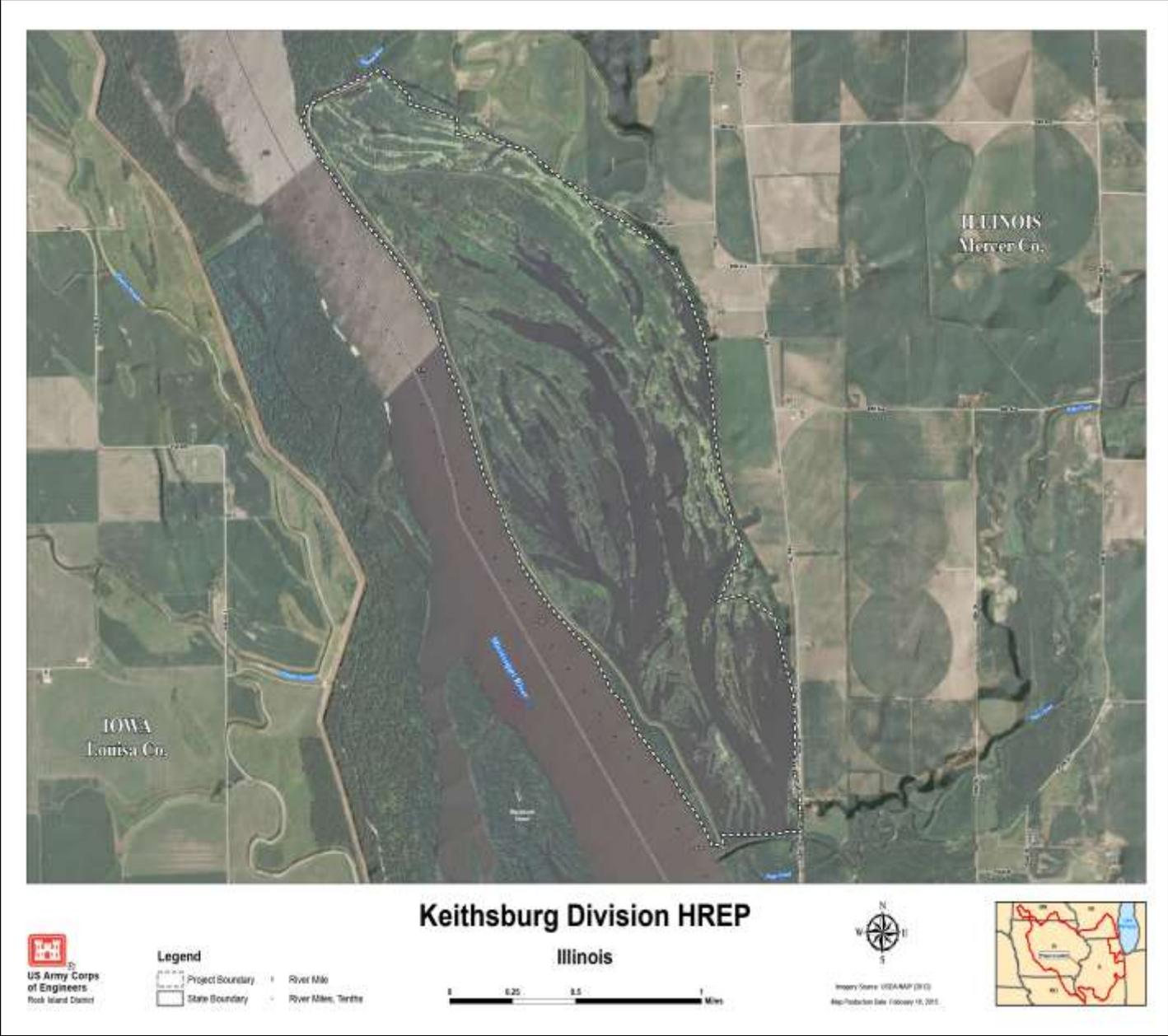
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**PROJECT AREA**

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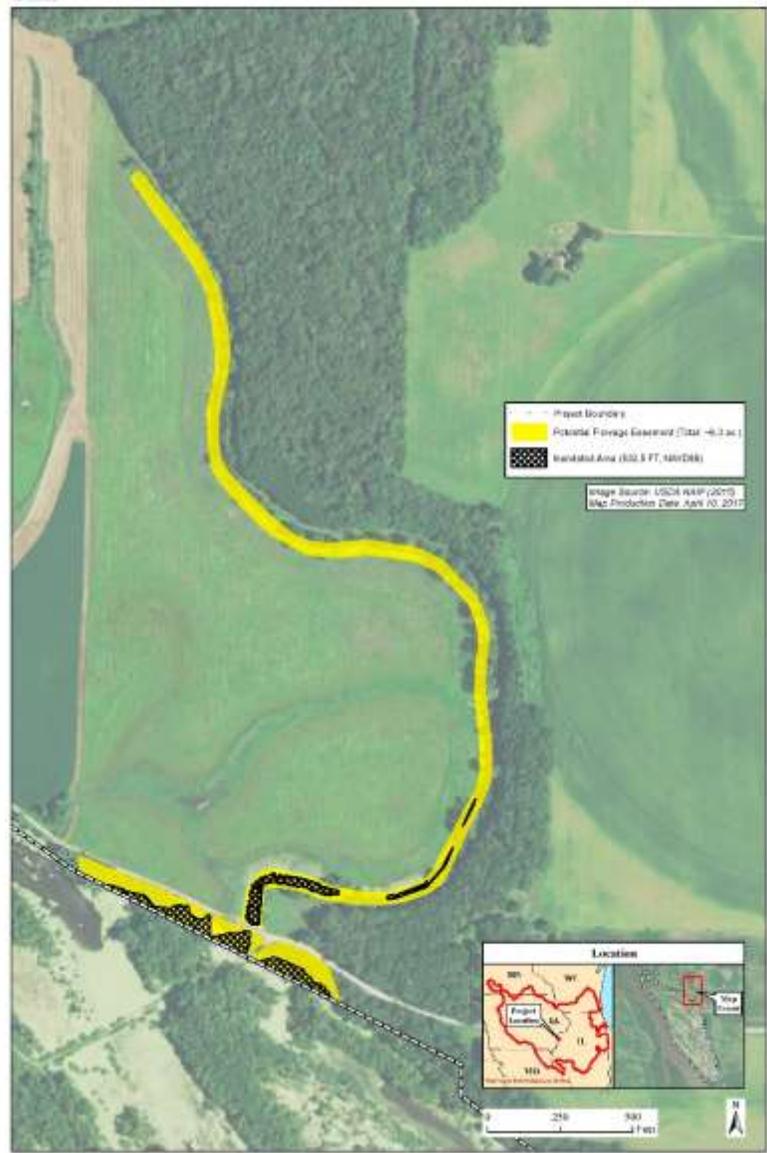


# UMRR Keithsburg Division - Potential Flowage Easements

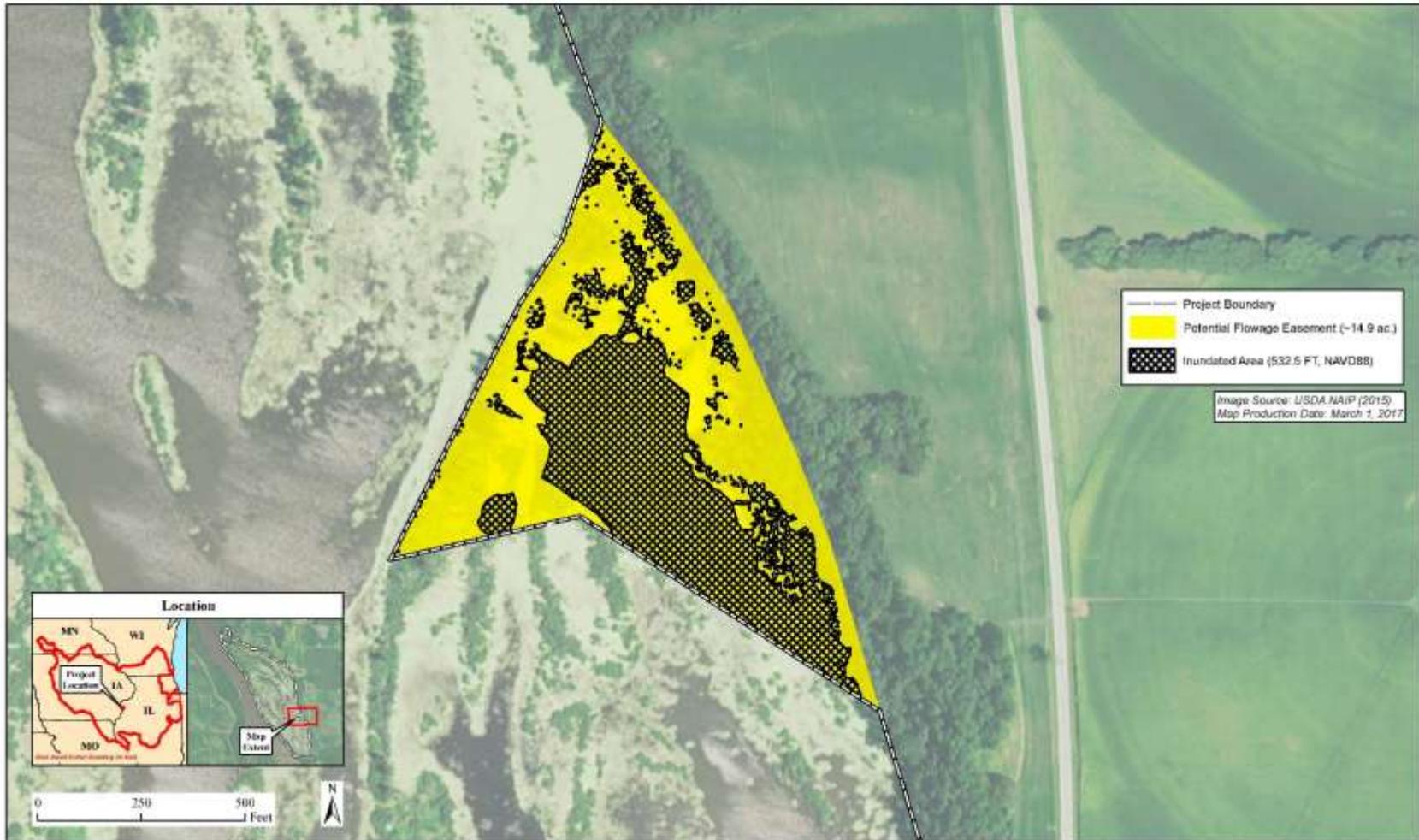




# UMRR Keithsburg Division - Potential Flowage Easements



## UMRR Keithsburg Division - Potential Flowage Easement



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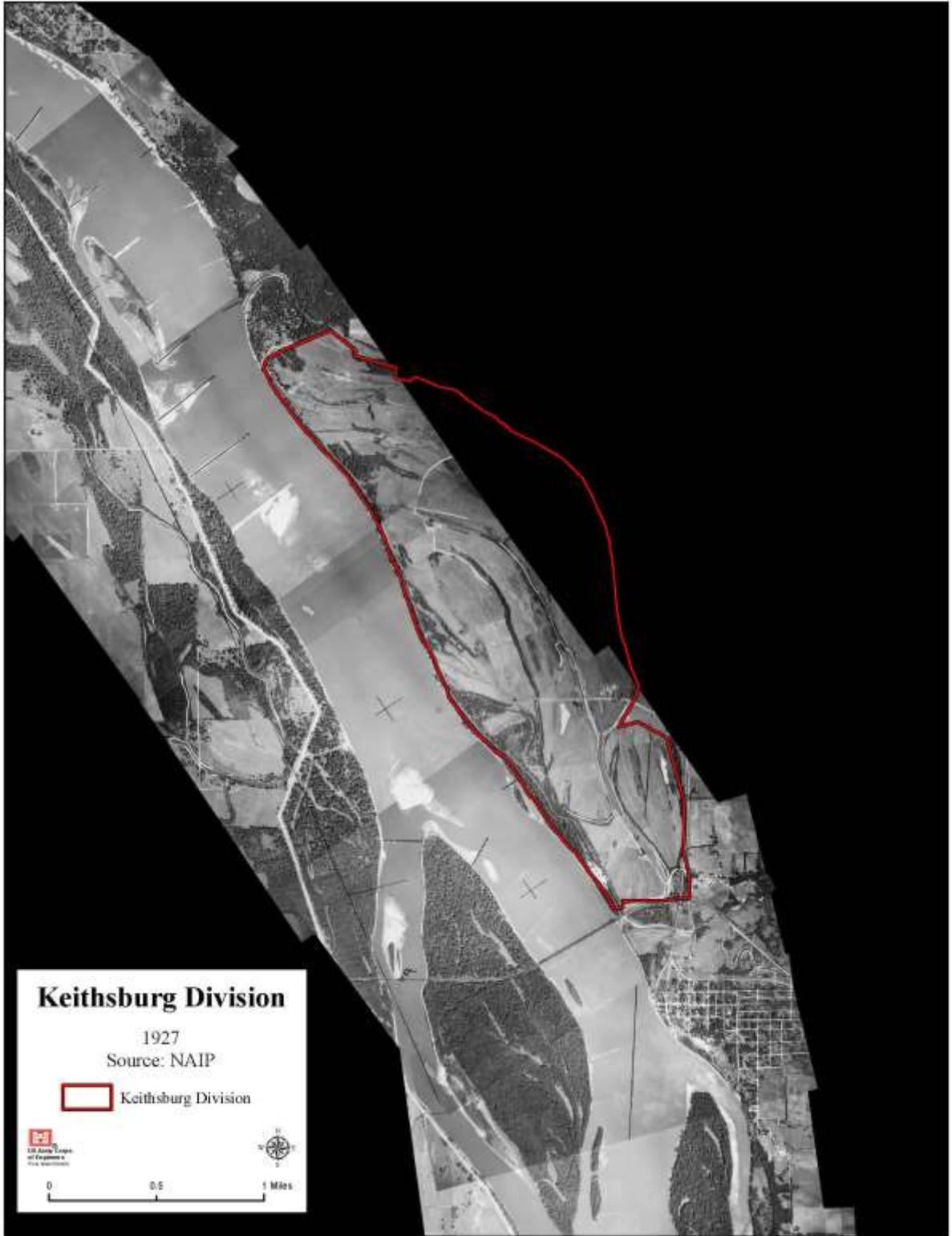
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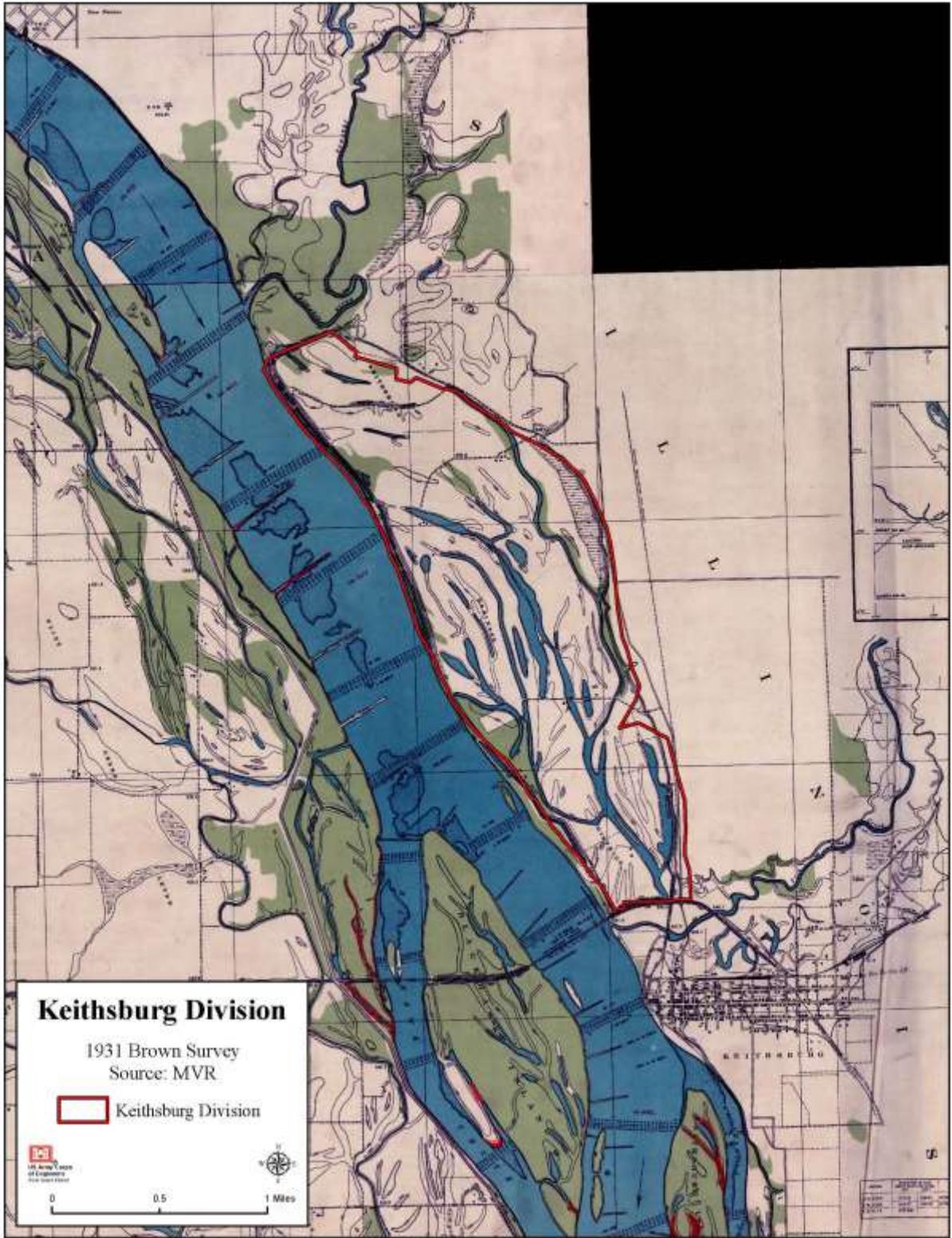
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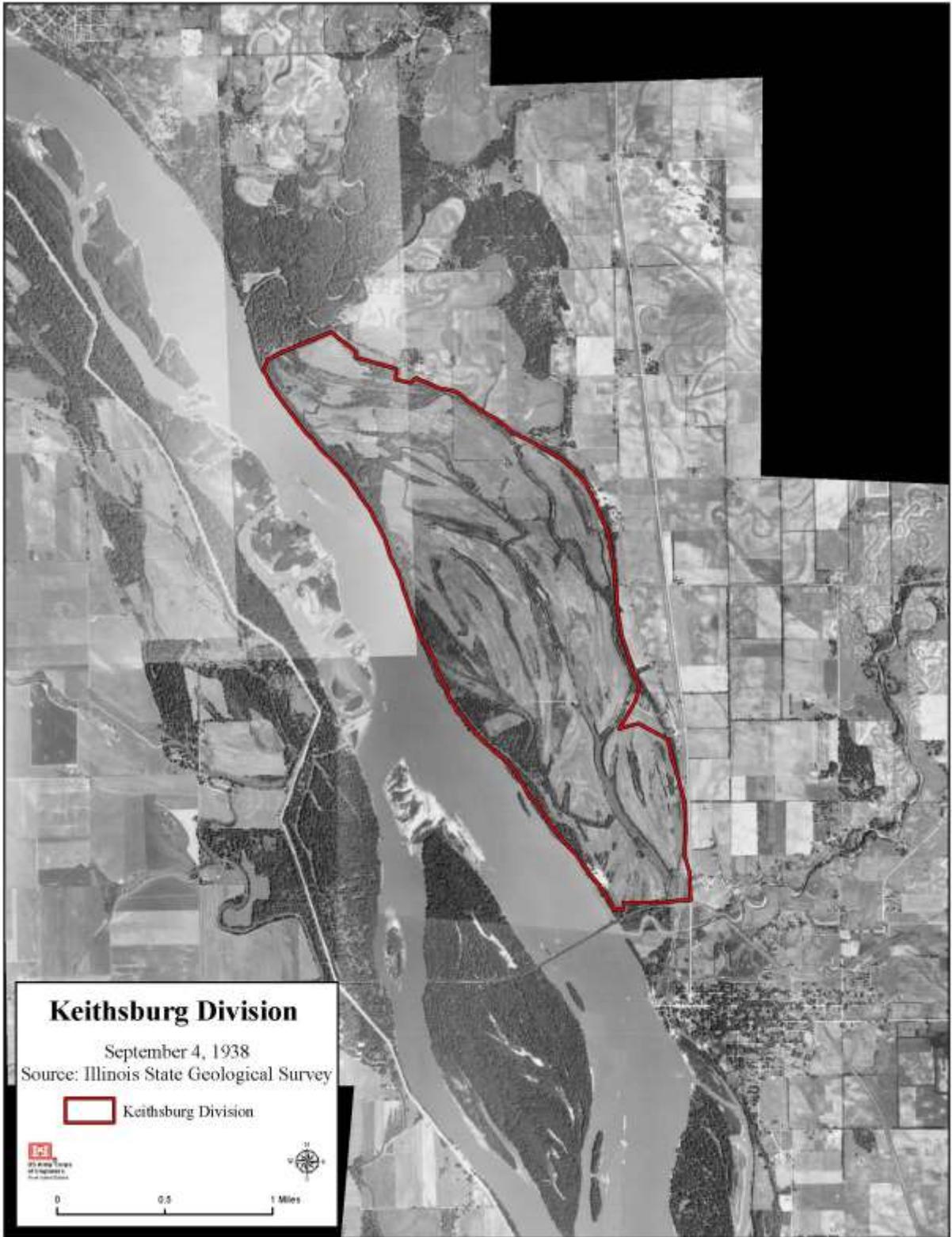
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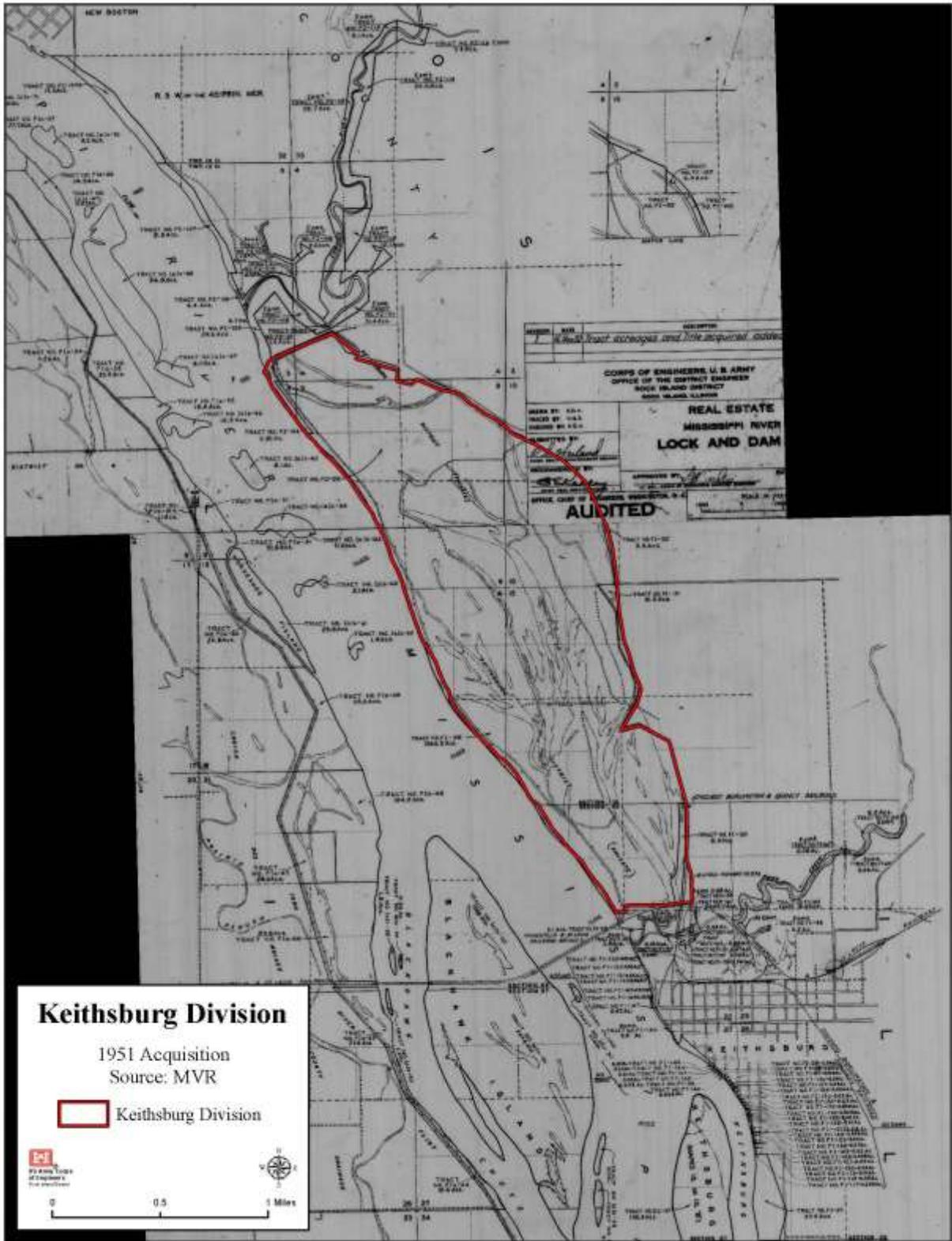
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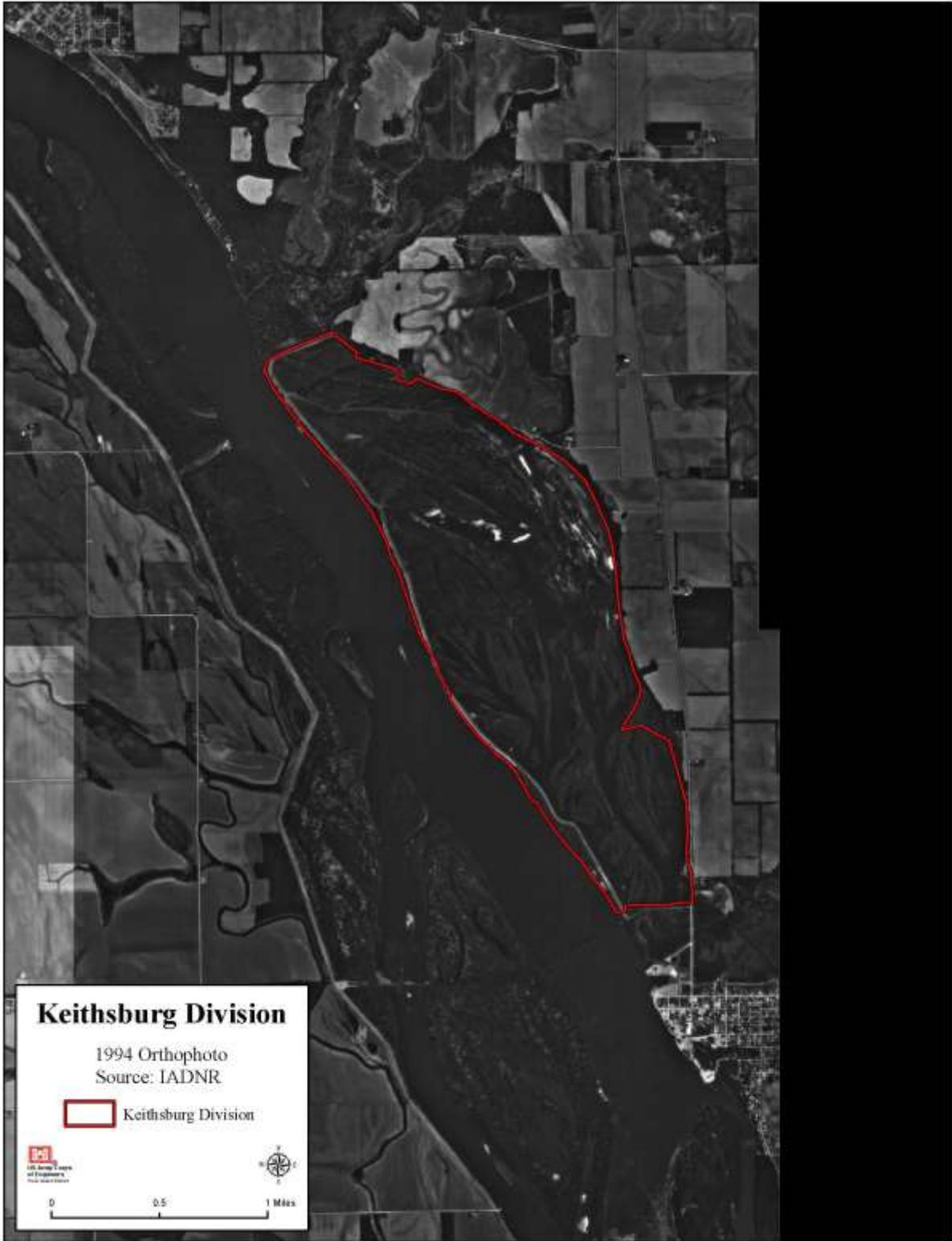


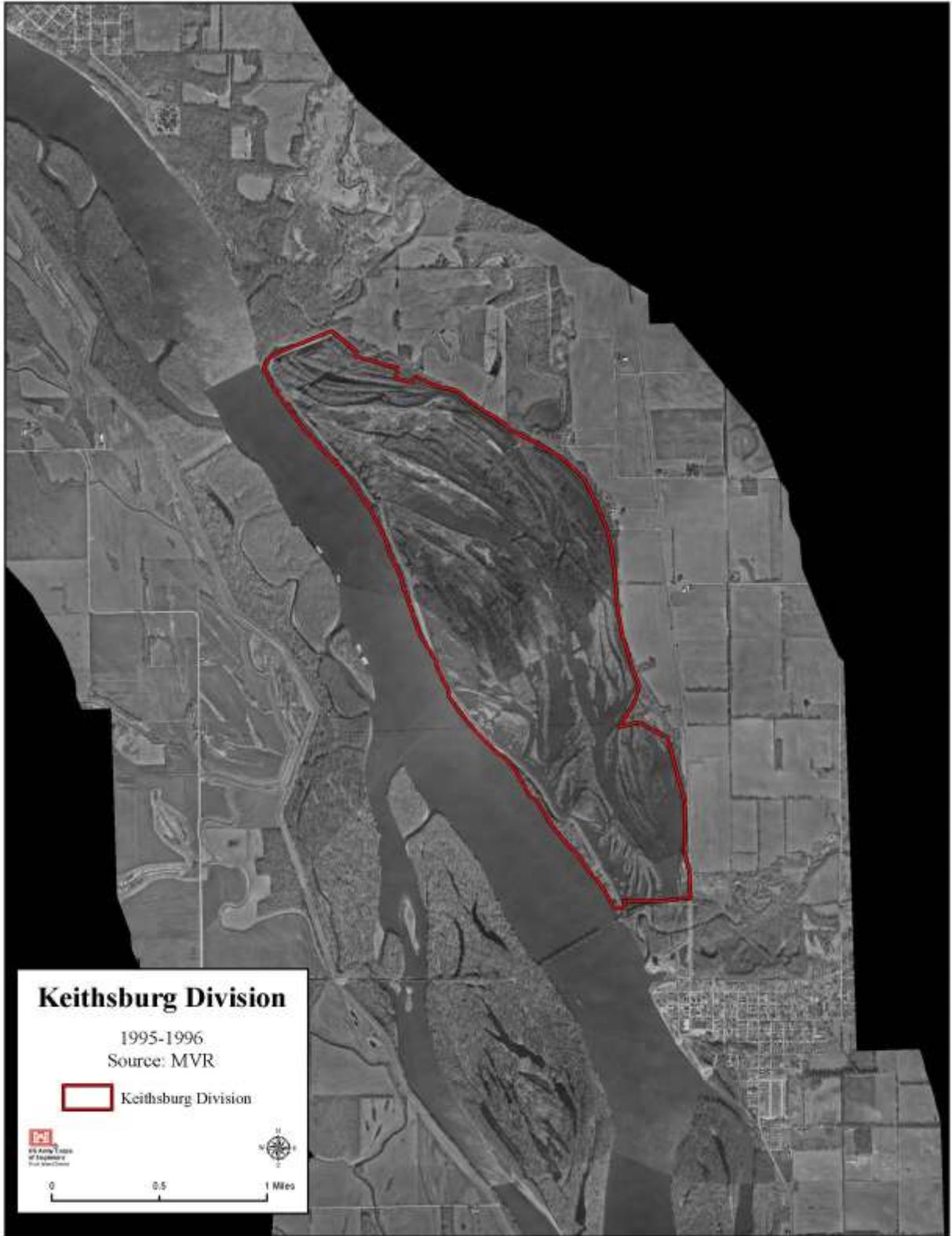


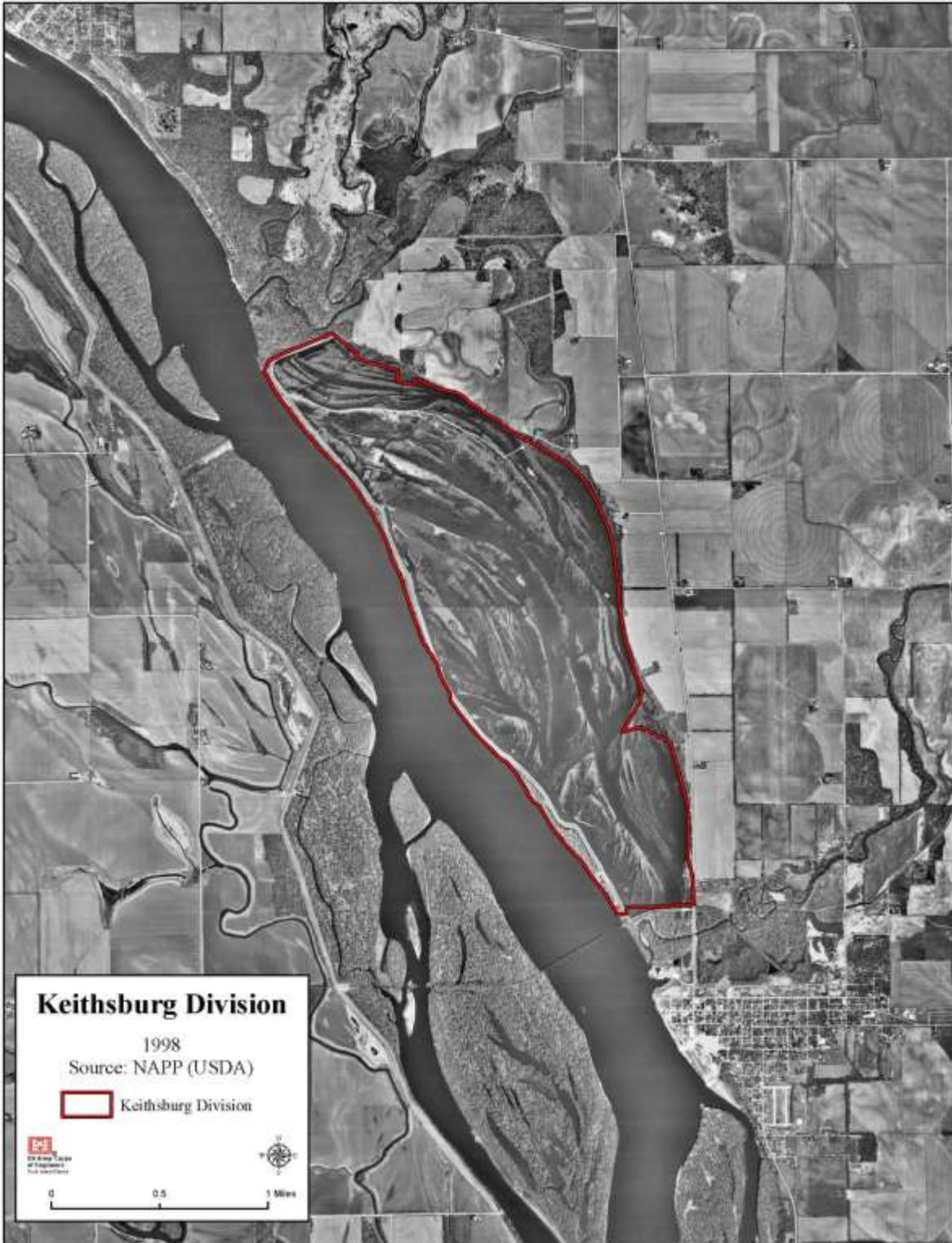


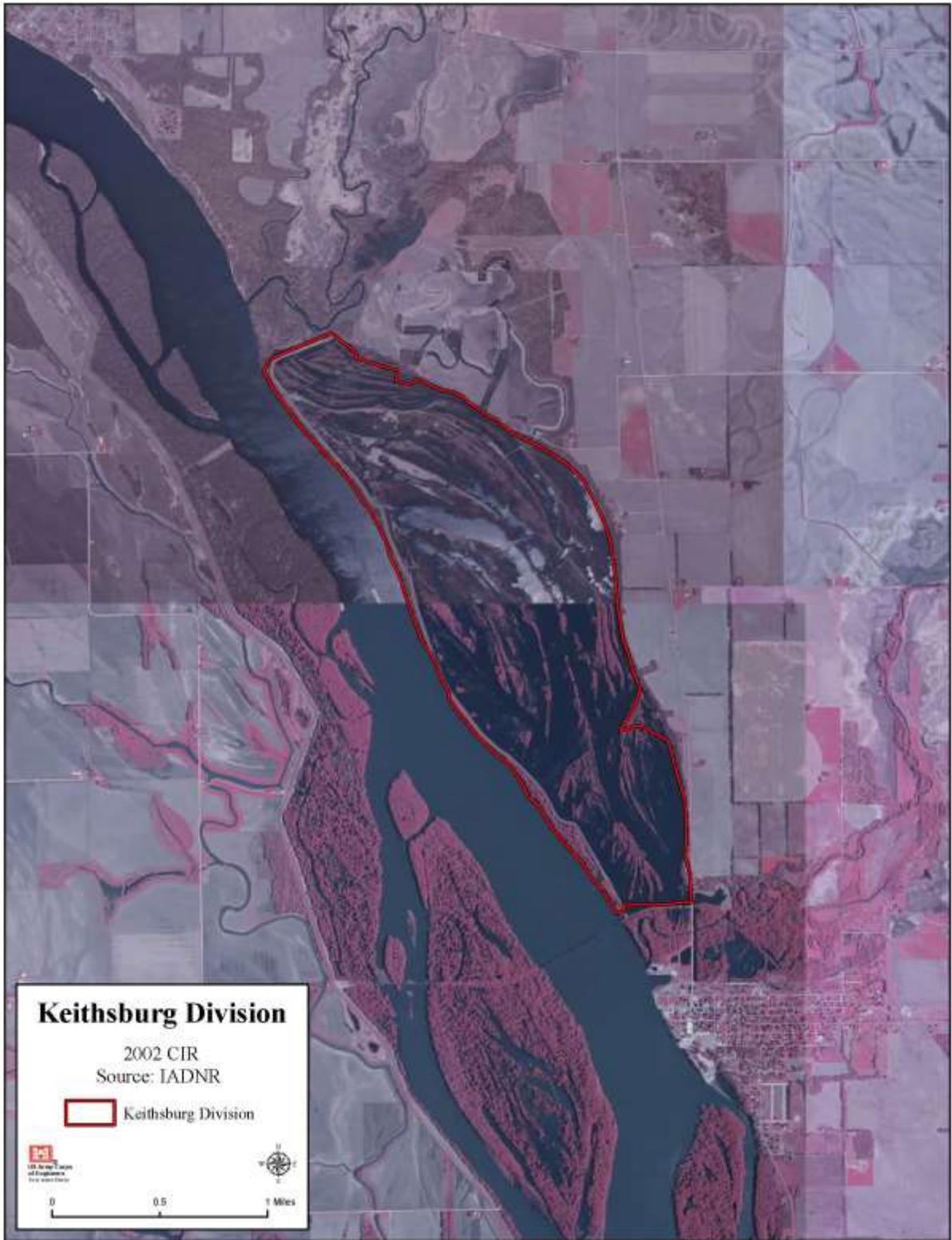


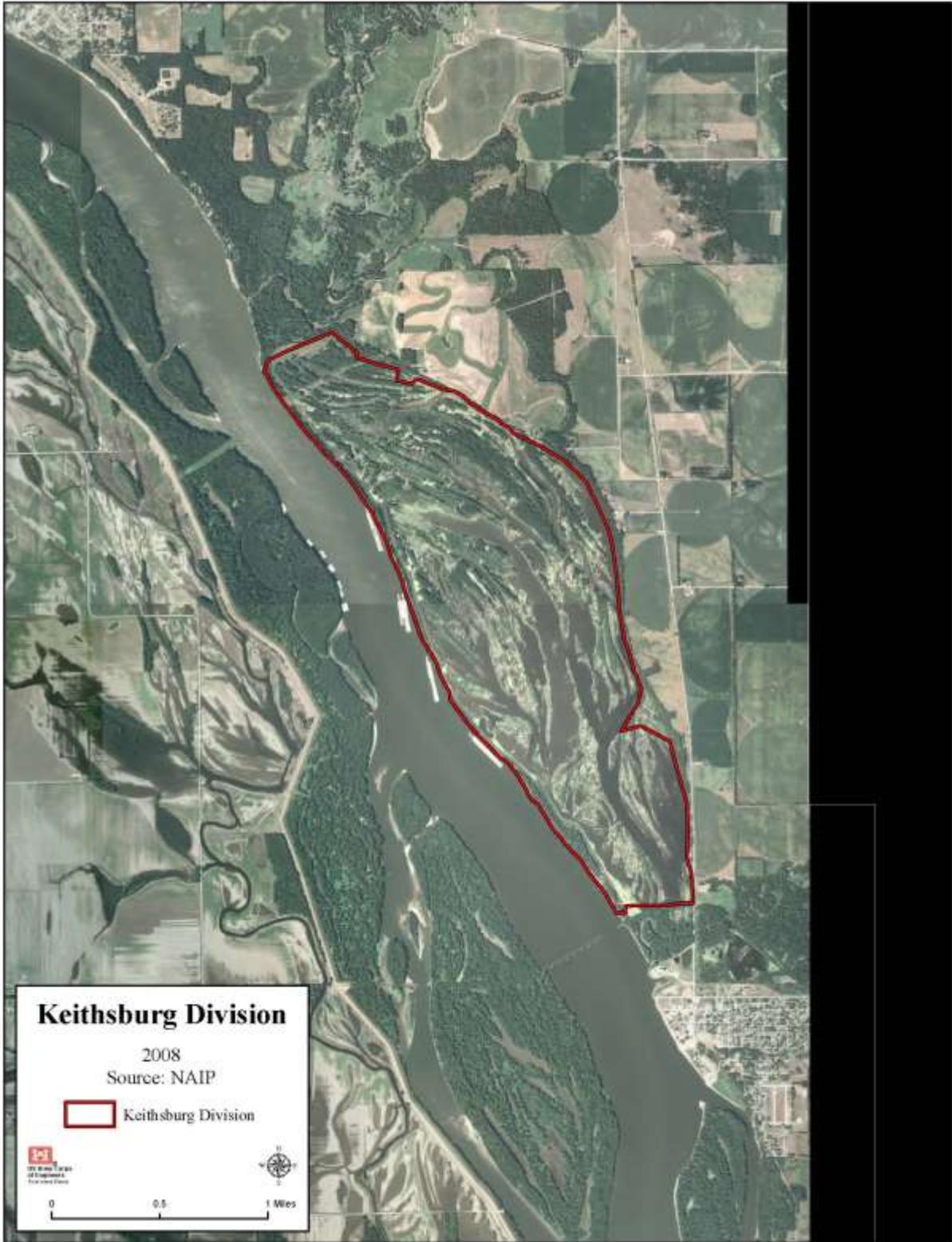


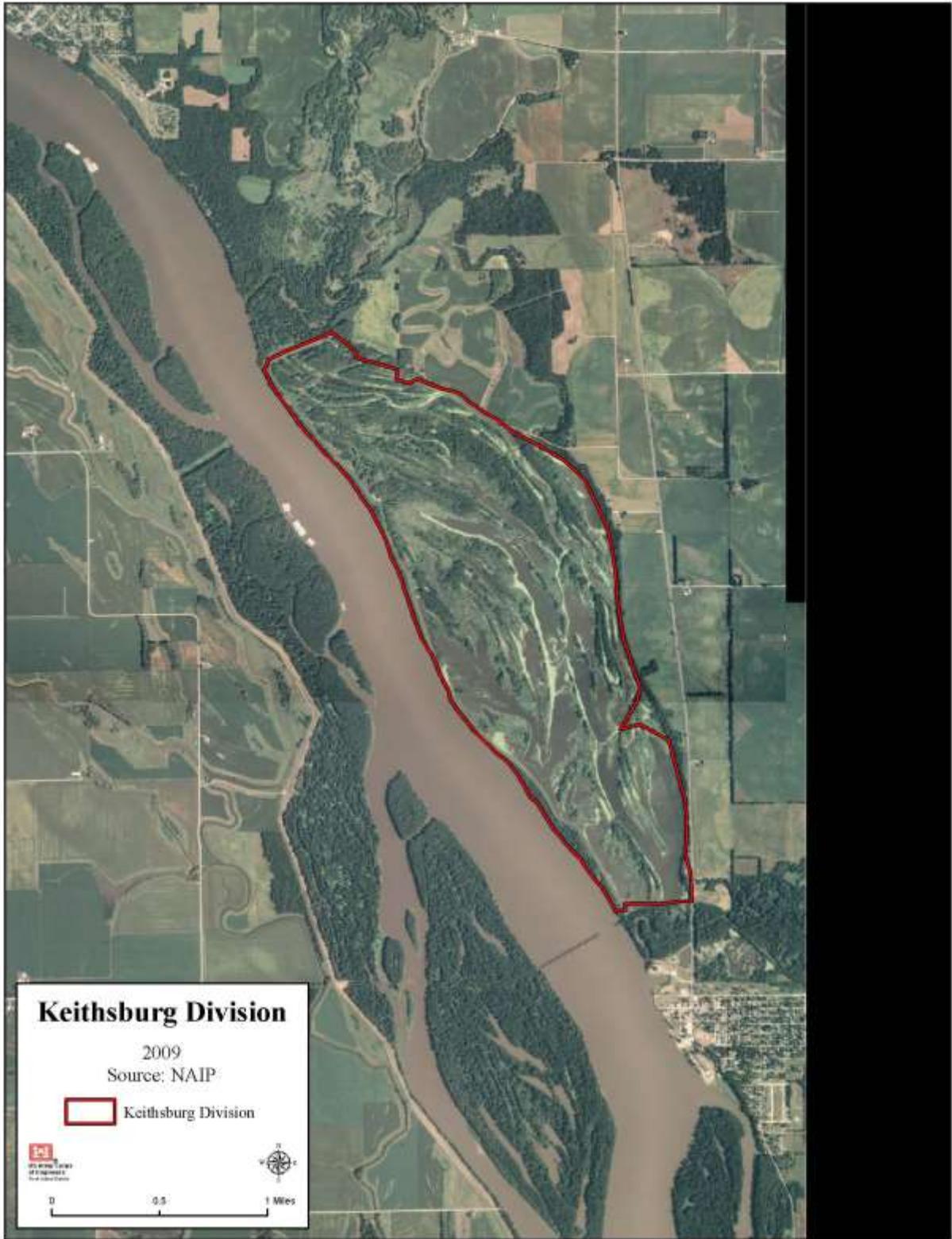


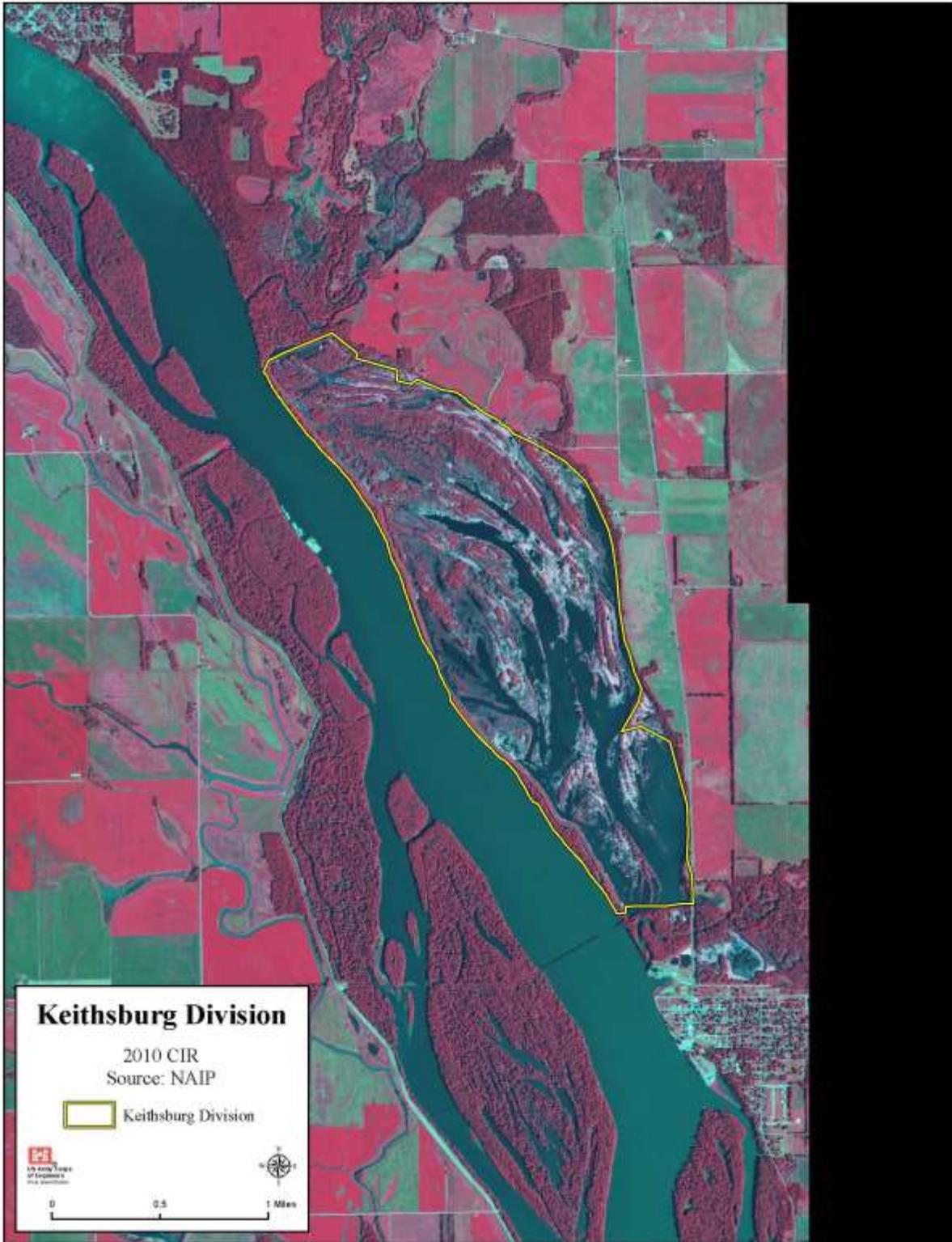


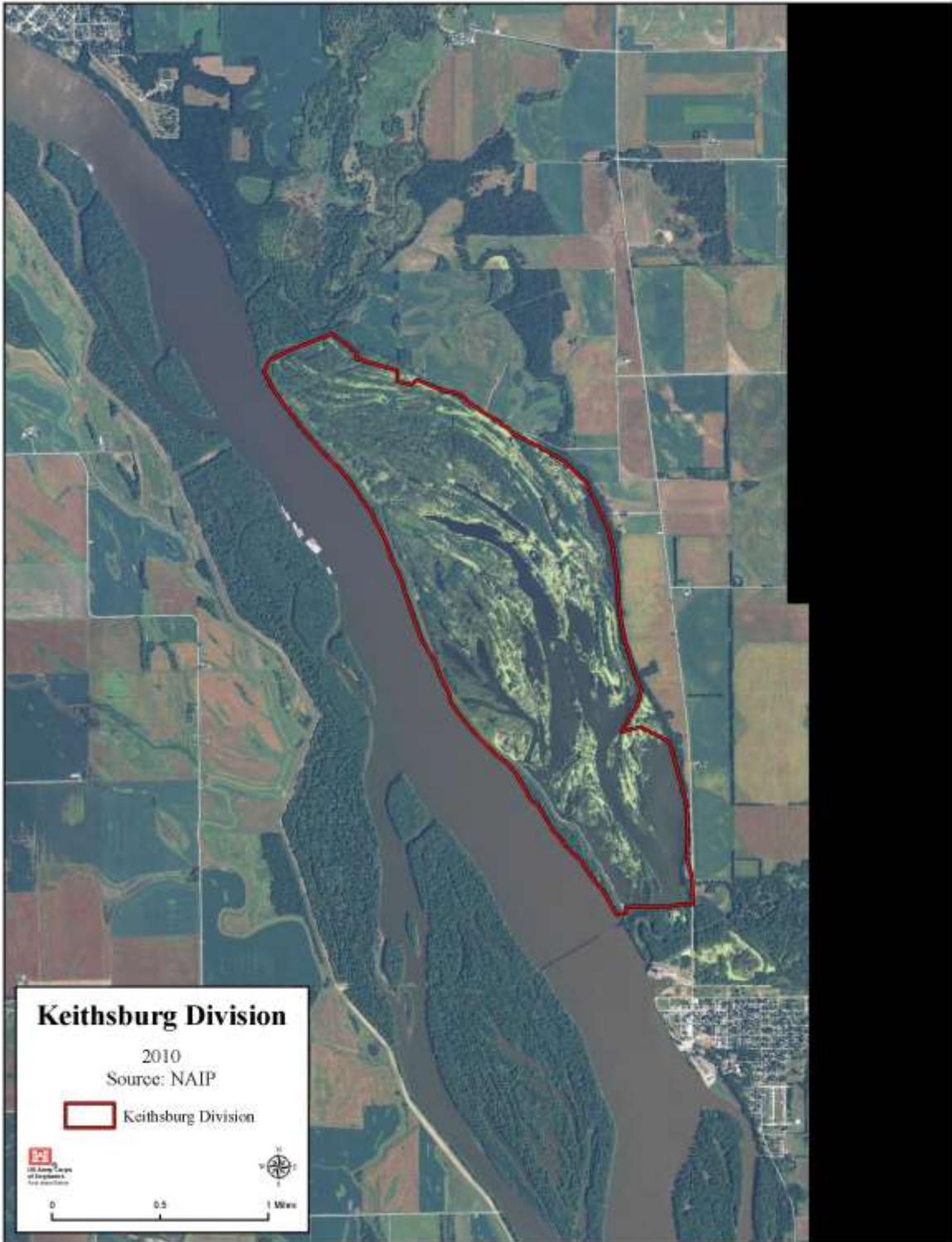




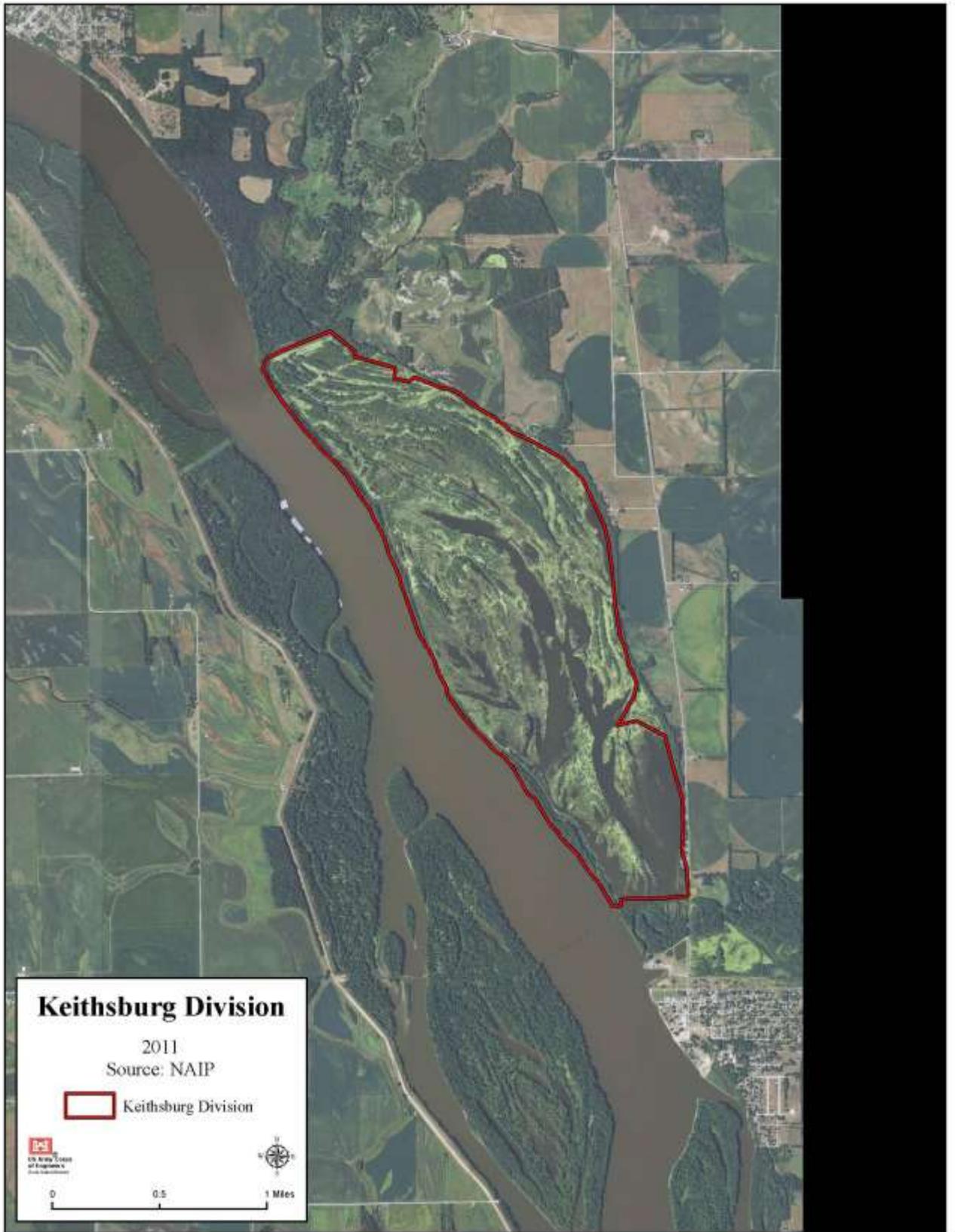


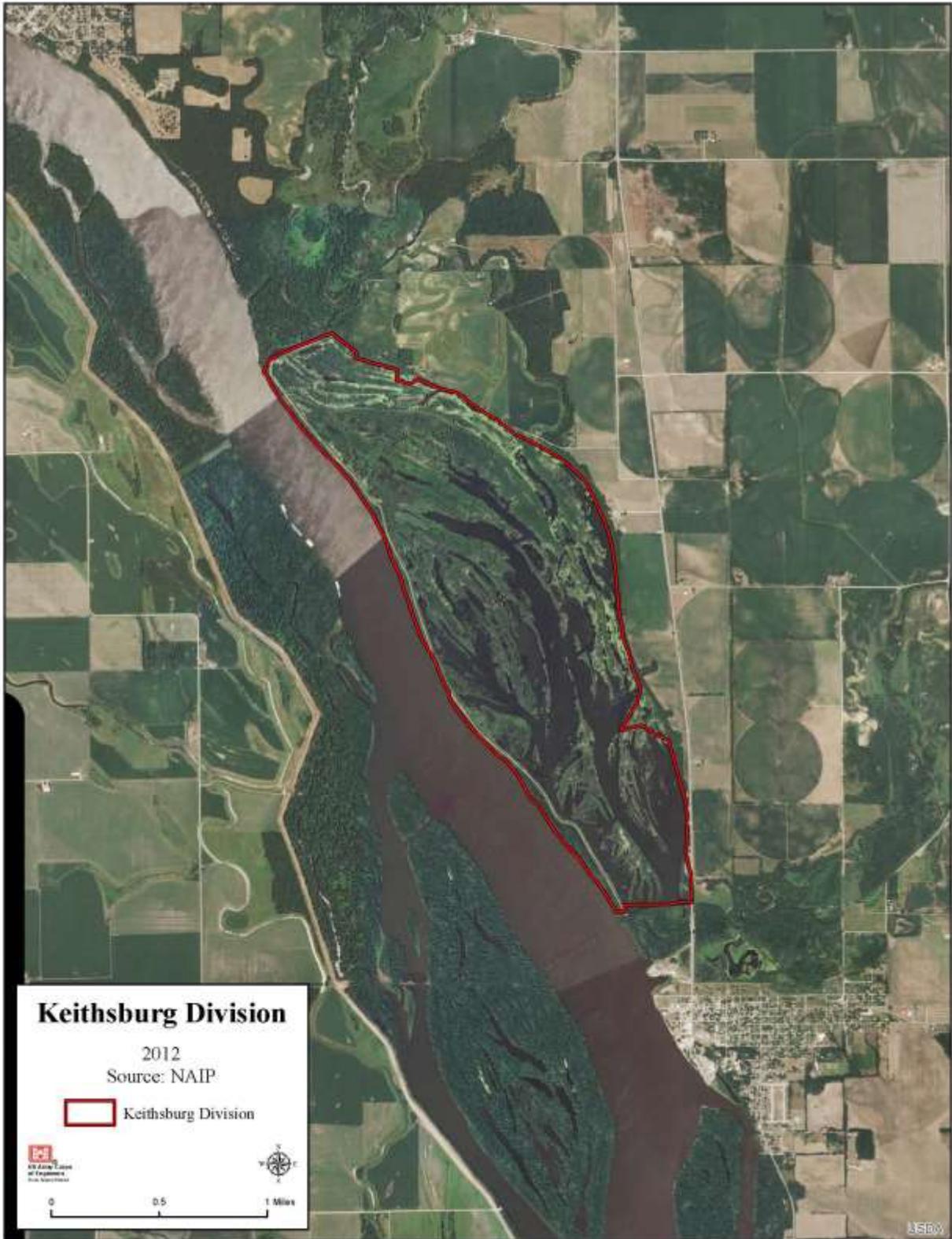




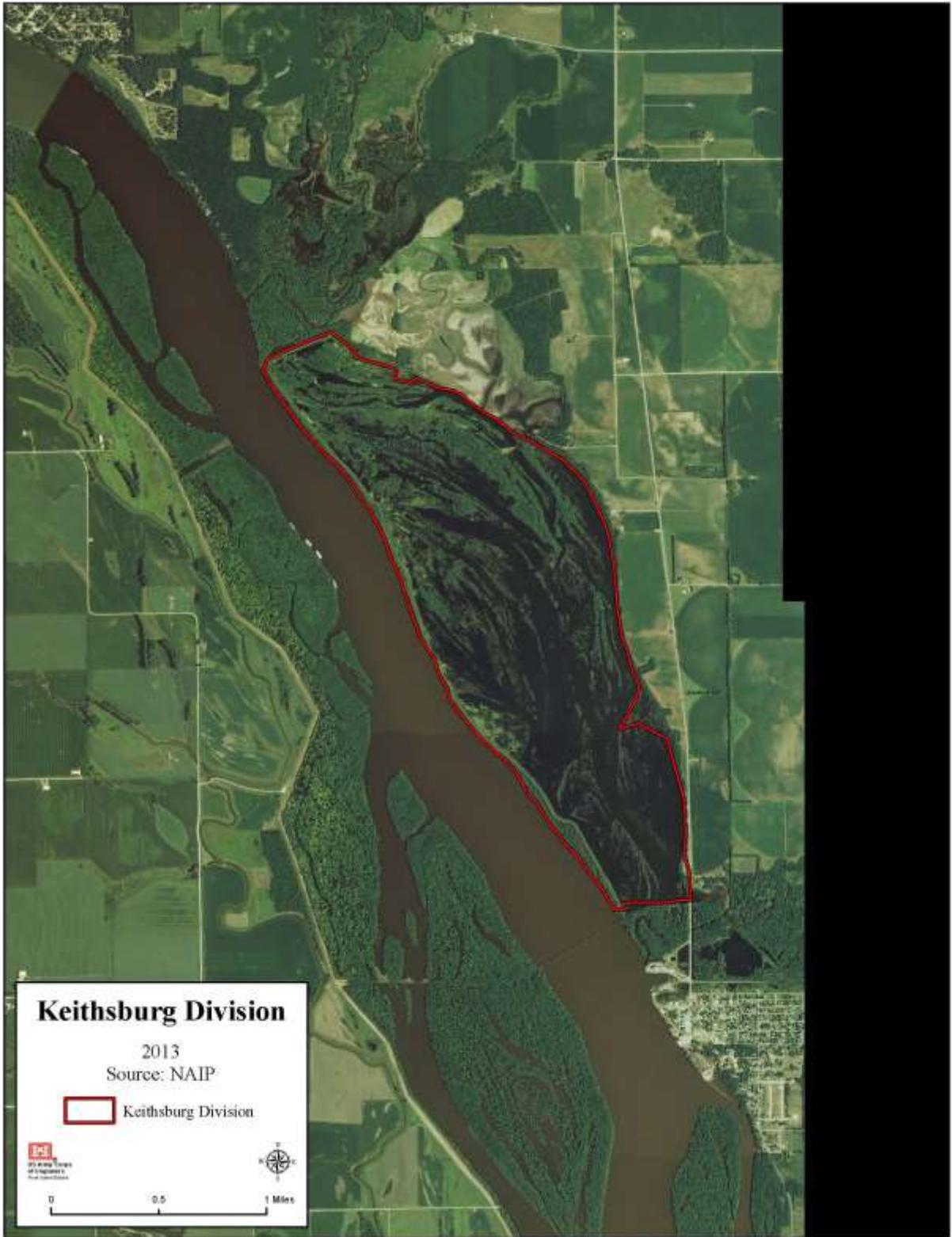














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